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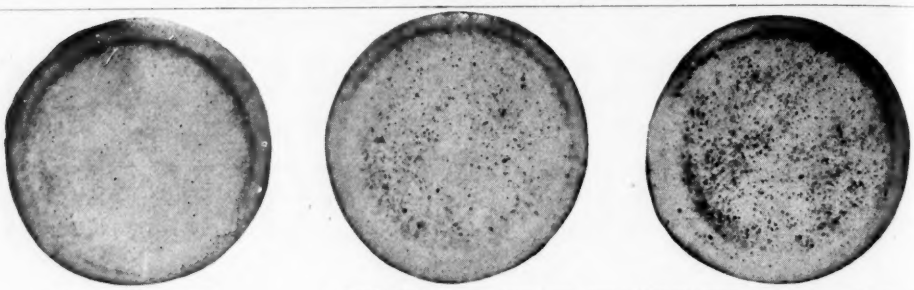

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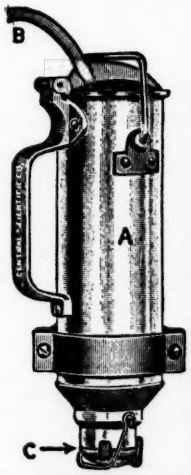

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ORIGINAL ARTICLES

PRESIDENT'S ADDRESS*

By DR. CLINTON S. WESTCOTT

454 ANGELL ST., PROVIDENCE, R. I.

It has been a rule of this association, apparently as changeless as the laws of the Medes and Persians (and they, you remember, were subject neither to amendment nor modification) that the retiring president should deliver an address. Whether this was the price of holding the office or of relinquishing it I have never been able to determine.

The more recent addresses have been in the nature of Jeremiads foretelling woe to the profession and exhorting us to mend our ways if we would not find ourselves submerged in a rising tide of socialized medicine.

The rule under which these addresses have been given resembles some of our legislative enactments in that it contains a neat little joker. To my mind the joker is that the presidential address is called for at the end of the incumbency rather than at the beginning. This leaves the retiring officer free to "view with alarm" or urge to action knowing full well that within ten minutes after he stops speaking he will be entirely free from all official responsibility and that it will devolve upon his successor to attempt to carry out the more or less desirable if somewhat nebulous recommendations.

A more logical procedure would be to have the address at the beginning of the term, a sort of platform, so to speak, with twelve months in which to register some advance along the lines proposed.

There are two ways in which we may proceed in our endeavor to avert the calamities prophesied for us. One is to eliminate our faults and the other is to strengthen our good points. And notwithstanding the frequent verbal castigations we receive, I am thoroughly convinced that we have some good points.

We have been told that socialized medicine is just around the corner, but if we look for them we find strong conservative forces opposing it.

It is a commonplace of medicine that many methods of treatment based solely on empiricism after undergoing a period of eclipse have been brought back and rationalized by the further advance of scientific investigation.

So much is this the case, not only in medicine but in other branches of knowledge, that it is well to scan closely any institution which has stood the test of centuries before we declare ourselves ready to discard it.

Since the first records of the healing art the relations of doctor and patient have been closer and more personal than in any other professional relationship. Even the confessional fails to elicit some of the confidences which are freely given to the trusted physician. These confessions are frequently the first and most important step toward cure. It is only comparatively recently that we have had this scientifically explained by the psychologists, but the truth has been recognized by wise physicians for centuries and dimly felt by the patients.

It is this more or less unconscious realization by the public that is back of the cry so frequently heard bewailing the loss of the old family practitioner who knew his patients as well as his medicine. State medicine could offer no adequate substitute.

The advance of medical knowledge has indeed made impossible the old doctor who was well informed in all branches of medicine, but it has seemed to the writer that recently the pendulum has begun to swing away from the tendency to demand a specialist at the first sign of illness and back to the appreciation of and desire for the modern representative of the old family doctor. This is the man who endeavors to know his patients and also to know enough of the various specialized branches to be able to call promptly when needed the expert best fitted to cope with the given case and patient.

*Delivered at the Annual Meeting of the Providence Medical Association, January 5, 1931.

This arrangement can be successful only if we show a broad spirit of co-operation and have learned as much as possible from each other.

As a slight contribution toward bringing about this highly desirable state of affairs we have endeavored during the past year to bring before this association the work of various men who have excelled in their own lines and who have had something definite to teach us. Some of these men have come to us from other cities. Many of them have been our own members. We have here among ourselves a tremendous aggregate of ability and achievement if we would but make use of it.

We do not expect to gain a sufficient knowledge of these special branches to be able to compete with the experts or do without their valuable collaboration in difficult cases. We do hope to attain an insight into the scope of their work and the indications for it.

The good attendance at our meetings throughout the year has been gratifying to those responsible for the programs and is a sure indication that the members of this association are alive to their responsibilities and to any chance to increase their value to their patients and to the community.

If this spirit could prevail throughout the whole profession there would be less call for state medicine. Truth compels the admission that this spirit is not universal. There are some who are less concerned with their medical efficiency than with their financial advancement.

The amount of work done by you free or for utterly inadequate compensation is prodigious, yet in many lay minds the medical profession is thought of as demanding exorbitant fees.

Every good cause has its disreputable hangers-on and the medical profession is discredited by a few, fortunately a very few, whose favorite test is the gold test, and whose idea of solving a medical problem is to determine the maximum numbers of dollars that can be extracted from the patient or his family.

You know who these men are, and you can do much to curb their activities, if not as an association, then as individuals. The public should be protected from their depredations and the profession from the disgrace they bring. They shelter themselves under our too nice regard for the letter of the law of medical ethics. The profession should purge itself of these medical racketeers if it does not wish to go down with them in a common condemnation.

Another side of the question of keeping up with medical advances has to do not with what we receive but with what we can give. We ourselves may make great contributions to the sum of medical knowledge. The work of the leaders in laboratory and hospital should be supplemented and checked by the observations of the rank and file of the profession, the men who see ninety per cent of the sickness in the community and who, to the average citizen, represent the medical profession.

If all medical men would keep adequate records of their observations and results, there would soon be available a mass of data which would be invaluable in the task of evaluating new methods of diagnosis and treatment.

By comparing results as recorded and not as vaguely remembered we would not only add to the sum total of knowledge but each of us would be acquiring the scientific habit of dealing with facts rather than impressions. This could not but vastly increase our efficiency and usefulness. And as we thus increase our usefulness to and appreciation by the public, by so much do we the more firmly intrench ourselves in the minds and hearts of the community and so make more secure our position. The medical profession will survive in its present personal relation status just so long as the public is convinced that in this way can they receive the maximum benefit, and no longer.

In closing I wish to give my hearty and sincere thanks to those of our members who have through the year given us the results of their labors, either by reading papers or by taking part in the discussions, and to the members at large who have so loyally supported the meetings for the past twelve months.

You have made it a pleasure to serve you.

COMMON DUCT STONES*

By CHARLES O. COOKE, A.M., M.D.

171 ANGELL ST., PROVIDENCE, R. I.

Common duct stones are being diagnosed, suspected, and demonstrated with much more frequency that was formerly the case. It is believed

that practically all stones in the common duct are gall-bladder stones which have formed in the gall-bladder or cystic duct and passed into the common duct. There are few authentic published cases of stones forming in the hepatic or common bile ducts.

Gall-stones in the gall-bladder were present in 10.9 per cent of 16,025 cases coming to autopsy at Basle. The number of males and females was about the same. Two-thirds of these cases of gall-stones were in women. In 10,866 postmortem examinations reported in the *British Medical Journal* for 1898, Volume Two, there were 9.4 per cent of cases showing gall-stones. The relative proportion of women to men was 2 to 1. Gall-stones are probably present then in at least 10 per cent of the adult population. Some observers place the percentage much higher.

What is the percentage of stones in the common duct in gall-bladder cases? There are no exact figures available.

At the Leahy clinic in a seventeen-year period from 1910 to 1926 inclusive, there were 619 patients operated on for disease of the biliary tract. The common duct was explored 96 times, 15.5 per cent, and 52 patients, 8.4 per cent, were found to have stones. In the three-year period from 1927-1929 inclusive, at the same clinic, there were 413 operations for disease of the biliary tract. In 140 or 33.8 per cent of these cases the common duct was explored 74 of these cases, or 17.9 per cent, had stones in the common duct. These figures indicate that as the frequency of the exploration of the common duct was doubled, the incidence of common duct stones was doubled. The percentage of cases of stones in the duct increased from 8.4 per cent to 17.9 per cent.

At the Mayo Clinic in 1928 and 1929 there were operations on 1,663 patients who had gall-stones. In 92 cases, 5.53 per cent, the gall-stones were found only in the common duct. In 127 cases, 7.6 per cent, had stones in both the gall-bladder and the common duct. In the remaining 1,444 cases, 86.83 per cent, gall-stones were found only in the gall-bladder. Of the 1,663 patients all of whom had gall-stones, there were 219, 13.2 per cent, who had stones in the common duct.

During the twenty-year period from 1910 to 1929 inclusive at the Leahy Clinic, there were 1,032 operations performed for disease of the biliary tract. Common duct stones were found in 126 cases, or 12.1 per cent. These percentages are practically the same.

There has recently been reported from the Mayo Clinic a group of 160 cases of gall-stones in the ampulla of Vater. There was previous operation in 72 of these cases. In 55 per cent of the cases no relief had been obtained. In 24 per cent of the cases there had been complete relief following the operation, varying from three months to thirty years. In the remaining 21 per cent, some relief had been obtained but enough of the original symptoms had persisted to induce the patients to seek further relief. Seventeen, or 10.6 per cent, had external biliary fistulae present, some as long as two years. In the group of 160 cases there were 11 deaths, a mortality of 6.8 per cent. At the Leahy Clinic in 74 cases of common duct stone the mortality was 6.7 per cent, approximately the same.

In the last group of 74 cases of stone in the common duct at the Leahy Clinic there were 29 patients, or 39 per cent, who gave no history of jaundice, and who were not jaundiced at the time of operation.

Of the 140 patients who had the common duct explored at the time of the gall-bladder operation, there were 72 who had attacks of pain and jaundice in the past and yet in one-third of these cases no stones were found in the common duct. From these facts it is evident that many patients have stones in the common duct without jaundice and also that many patients with jaundice have no stones in the common duct that can be demonstrated at the time of the operation. Many of these cases may have had stones in the common duct that have been passed into the duodenum. Some of these cases have stones in the common duct that are overlooked at the operation after painstaking search.

It was formerly believed that in patients who had a history of recurring attacks of gall-stone colic without jaundice the probabilities of a stone, or stones, in the common duct were small. In view of the preceding figures from the Leahy Clinic, it would seem that the common duct must be opened much more frequently than before.

It was also formerly believed that stones in the

*Read before the Rhode Island Medical Society, December 4, 1930.

common duct were not present unless the duct was dilated. This opinion must also be revised. Several observers lately have found stones in the common duct in the absence of any dilatation.

It is a well-known fact that stones may be present in the duct which can not be felt until the duct is opened. After the duct is opened the stones can best be felt by the finger in the duct which in many cases is so widely dilated that it readily admits the index finger. Stones that can not be felt in the duct by instruments or the finger can occasionally be washed out by irrigation which must not be done too vigorously.

Stones in the common duct may be single or multiple. Osler describes three groups of cases:

"(1) A stone tightly corks the common duct causing permanent occlusion: or it may partly rest in the cystic duct and may have caused thickening of the junction of the ducts; or, a big stone may compress the hepatic or upper part of the common duct. The jaundice is deep and enduring, and there are no septic features. The pains, the previous attacks of colic, and the absence of enlarged gall-bladder help to separate the condition from obstruction by new growths. The ducts are everywhere dilated and everywhere contain a clear mucoid fluid. This is sometimes called white bile."

I am indebted to Dr. William B. Cutts for the privilege of reporting such a case. A married woman 37 years of age entered the Rhode Island Hospital, May 4, 1917, with a story of indigestion and jaundice of seven weeks' duration. She had been treated six months previously for severe pain in the lower right chest which had been diagnosed as an infarct of the lung. There was no story of severe pain. The stools were clay colored and the urine was dark colored with bile. At operation the gall-bladder and ducts contained only clear fluid. A stone was found firmly impacted in the ampulla of Vater. This was removed with difficulty. The common duct was drained, and the gall-bladder was removed. There were no stones in the gall-bladder. This patient continued to drain nothing but clear fluid for a week. After that bile drainage took place and convalescence was uneventful.

Osler (2) Incomplete obstruction with infective cholangitis. There may be a series of stones in the common duct; a single stone which is freely movable; or a ball-valve stone in the diverticulum of Vater.

Naunyn many years ago gave as the distinguishing signs of stones in the common duct:

(a) The continuous or occasional presence of bile in the faeces.

(b) Distinct variation in the intensity of the jaundice.

(c) Normal size with only slight enlargement of the liver.

(d) Absence of distention of the gall-bladder.

(e) Enlargement of the spleen. This is not always present or at least can not be made out in my experience.

(f) Absence of ascites.

(g) Presence of febrile disturbance.

(h) Duration of jaundice for more than one year. This length of time has not always been the case in my experience.

In connection with the ball-valve stone, which is most commonly found in the diverticulum of Vater, though it may be in the common duct itself, there is a special symptom group:

(a) Ague-like paroxysms, chills, fever sweating; the hepatic intermittent fever of Charcot.

(b) Jaundice of varying intensity which persists for months or even years and deepens after each paroxysm.

I saw such a case about two years ago. This patient was a man of 60 who had had indigestion for twenty-five years. For the previous three or four months he had attacks of pain with fever and jaundice every day. The attacks were of short duration and the jaundice rapidly disappeared. At operation, five stones were removed from the common duct.

(c) Pains in the region of the liver with gastric disturbance at the time of the paroxysm. These symptoms may continue off and on for several years without the development of suppurative cholangitis. The rigors are of intense severity and the temperature may rise to 103 degrees or 105 degrees. The chills may recur daily for weeks, and present a tertian or quartian type, so that they are often attributed to malaria.

The jaundice is variable and deepens after each paroxysm. Pain is sometimes severe and colicky, but may be absent.

An interesting and valuable point is absence of dilatation of the gall-bladder in cases of obstruction from stone, Courvoisier's rule.

(d) Incomplete obstruction, with suppurative cholangitis. The mucosa is thickened, often eroded or ulcerated, and there may be extensive suppuration in the ducts throughout the liver, and even empyema of the gall-bladder. There may be liver abscess; there may be a perforation of the gall-bladder.

These cases run a shorter course and do not get well.

Diagnosis. The diagnosis of common duct stones is made on the history of the patient, the physical examination, and laboratory tests. A complete history of the patient offers the best clue to the diagnosis. As previously noted, pain is usually present. It is the most common symptom in common duct stone, being present in about 97 per cent of the Mayo Clinic cases mentioned above. The pain may be very severe or mild. Intermittent jaundice was present in 73 per cent of the Mayo series. Symptoms of sepsis as shown by chills and fever were present in 51 per cent of the Mayo series. Bile was recovered from the duodenum by the Rehfus tube in 83 per cent of the cases.

In a typical case, jaundice appears soon after the pain. The jaundice may last for weeks or months or it may disappear rapidly. The stools may be clay colored for a short time. Jaundice which appears suddenly after an attack of abdominal pain and disappears rapidly is characteristic of stone in the common duct. Chills and fever may be present as the only symptoms, but this is unusual. Loss of weight is often characteristic of the disease. In some instances pancreatitis of different degrees may complicate the situation and the pain may be referred to the left flank or to the back under the left scapula.

In atypical cases, syphilis of the liver must be ruled out. Clute in his recent paper reports such a case.

This patient, a woman age 40, had attacks of typical gall-stone colic, mild jaundice, and tenderness in the right upper quadrant. No stones were found at operation, but a gummatous liver was demonstrated. The common duct was drained. With large amounts of mercury and potassium iodide, the pain and jaundice entirely disappeared.

Tabes should also be considered in this connection.

In some cases of residual tenderness of the right upper quadrant with severe epigastric pain, coronary occlusion must be remembered and excluded. This can be done by the electrocardiogram.

The estimation of the bilirubin content of the blood is a guide as to whether or not the jaundice is increasing.

As a general rule, it is unwise to operate in the presence of increasing jaundice. It is better to wait until the jaundice is stationary or decreasing. This does not always happen, and in severe cases that do not promptly improve and in which there is evidence of increasing cholangitis, it is better to operate and drain the common duct.

In the pre-operative period everything should be done to put the patient in the best possible condition. Fluids are forced by mouth, rectum, hypodermoclysis, and if necessary, intravenously. Glucose is given by rectum and in the vein. If extra care is taken, it may be given in a five per cent solution under the skin.

The coagulation and bleeding time are always estimated. If these times are high they should be brought to normal limits by the use of calcium chloride intravenously or blood transfusion. Estimation of the sedimentation time of the red blood cells has been recently advocated by Linton. When this rate is high he advocates transfusion. Many surgeons advocate the routine digitalization of all patients before operation on the gall-bladder and bile ducts. This is desirable in many cases, but I have not always found it necessary.

The Operation. The anaesthesia should be carefully chosen. These patients do not stand ether well. Usually some other anaesthetic should be used. The operation can be performed under nitrous oxide anaesthesia supplemented by novocain solution one-half per cent around and in the incision. The operation can be performed with nerve block by novocain, but good relaxation is not obtained. In medical centres where ethylene gas is available, it affords good relaxation and there is less danger of pulmonary complications. In selected cases, spinal anaesthesia by Labat technique with neocain or by Pitkins method will be the anaesthetic of choice. This, however, should only be given by an expert who remains with the patient throughout the operation. He should see the patient on the day preceding the operation and the day following.

A pad or rest should be placed beneath the lower ribs to facilitate the exposure of the com-

mon duct. This must be removed at the end of the operation before the incision is closed in order to facilitate the suturing.

The incision should be adequate. I prefer the oblique incision extending from the epigastrium to a point about one inch external to the umbilicus on the right. This incision may extend from the xiphoid cartilage to a point two or three inches below the umbilicus. The incision in the skin should be longer than that in the fascia and peritoneum. It is not always necessary to open the peritoneum at the lower end for the whole length of the incision. This makes ventral hernia less liable and makes the closure of the incision much easier.

If the gall-bladder is in situ, the operation is much easier. It is seized with a curved clamp and traction exerted, bringing the common duct into an accessible position. If the common duct is difficult to identify, it can be demonstrated by aspiration with a small needle. The common duct is then palpated if a stone is felt it is opened between two Allis clamps and the stone removed. Further search should then be made for more stones. The duct can be sponged out with gauze and debris noted. It can also be gently irrigated and stones may be washed out in this way. A lead probe or curved haemostat is then passed into the lower end of the common duct and into the duodenum. This will usually indicate that the duct is clear. The probe or clamp is also passed upward into the hepatic duct to make sure that no stones are present.

If a stone can not be palpated in the common duct, when shall the duct be opened?

(1) In all cases where the duct is dilated.

(2) In all cases where pain and jaundice have been present, whether or not the duct is dilated.

(3) In all cases in which there is much thickening of the head of the pancreas.

(4) In cases of intermittent jaundice without pain.

The common duct is then drained, either by a T tube or a soft rubber catheter. There is an advantage in the use of the T tube. It allows a certain amount of bile to continue on into the duodenum. It can be clamped at times to allow bile to enter the duodenum. In cases of long continued jaundice, the patient needs bile badly. It can also be used for the administration of fluids and nourishment.

The gall-bladder should be removed in all cases where the condition of the patient will warrant it. It may be removed at a subsequent operation. If the gall-bladder is not removed, it should be emptied of stones if present and drained with a rubber tube. The upper abdominal cavity is drained with one or two cigarette drains.

If the gall-bladder has been previously removed, the operation is much more difficult. Dense adhesions may be present and structures are difficult to recognize. The common duct is deeply situated and distorted in many cases and usually has to be aspirated to be identified. The following case is typical:

A white married housewife entered a hospital in a neighboring city in May, 1930, and was operated on for gall-stones and the gall-bladder removed. She had pain similar to pain previous to operation three days after operation. After discharge from hospital she had many attacks of pain in the right upper quadrant associated with jaundice and vomiting. Entered Rhode Island Hospital in one of these attacks with jaundice. Seven calculi were removed from the common duct near duodenum.

It is the rule that in cases of stones in the common duct, the gall-bladder is usually contracted and shrunken. The adhesions may be very dense so that the duct can not be seen. The condition of the patient may also forbid any long operation. In these cases Moynihan has suggested a maneuver of rotating the common duct. The left hand of the surgeon is passed transversely inwards in front of the pylorus and above the stomach along the gastrohepatic omentum. The fingers are flexed and the hand and wrist bent over to the patient's left. In this way the common duct is twisted up into the wound and can be readily incised.

After the common duct is opened, the best way to discover the stones, if there are any present, is by introducing the finger into the duct. This can be done only in cases where the duct is well dilated. The value of palpation by the finger is well illustrated by the following case:

A white married female, 44 years old, entered Rhode Island Hospital January 6, 1923, complaining of typical gall-bladder attacks. X-rays showed stones in gall-bladder. Gall-bladder removed. It contained twelve faceted stones. Two stones removed from common duct. Entered Rhode Island Hospital October 11, 1930, with pain in gall-bladder region which has been present in attacks since four years after operation. The pains

grew gradually worse until during past year she had regular attacks of pain in this region very similar to the attacks suffered before her operation but more severe. The attacks have been associated with jaundice. At operation two stones faceted three-eighths inch in diameter were removed from common duct, which was one inch in diameter. These stones could not be felt before the duct was opened. After the duct was opened they could not be detected with instruments. With the finger in the common duct they were easily felt.

It is occasionally necessary to remove the stone by incising the duodenum and by incising the papilla. This is only necessary where the stone is tightly wedged, and should only be used when all other methods have failed. It is a hazardous procedure and adds greatly to the danger of the operation.

INTRAVENOUS UROGRAPHY*

E. W. BENJAMIN, M.D.[1]

201 WATERMAN ST., PROVIDENCE, R. I.

Intravenous urography, successfully achieved a mere two years ago, had its inception some time before this. The brilliant work of Graham on the visualization of the gall bladder undoubtedly proved a great stimulus to intravenous urography, and I dare say that the future will bring forth a similar method for the visualization of the cerebral ventricles and the subarachnoid spaces of the brain and spinal cord. As cholecystography is obtained by means of the selective excretion from the blood stream of sodium tetra-iodophenolphthalein through the liver, so likewise does intravenous urography represent the selective excretion of uroselectan from the blood stream through the kidney. Just as cholecystography represented the deliberate aim of Graham, so likewise was the goal of intravenous urography deliberately sought and achieved by Swick; and finally, just as Graham built on the foundations of earlier workers, so likewise did Swick carry on from the point reached by previous investigators. It is, therefore, incumbent upon us who are enjoying the benefit of this work to pause for a moment to dwell briefly on the history of the development of uroselectan.

In 1923, Rowntree and his co-workers were the first to achieve visualization of the urinary bladder, and, in some cases, of the ureters and pelvis by means of the oral and intravenous administration of sodium iodide.

A year later, in 1924, Volkmann, and Lichtenberg and Rosenstein, repeated the work of Rowntree with the additional aid of perirenal pneumography.

In 1927, Lenarduzzi and Pecco employed sodium iodide in animals, and, by ureteral ligation, visualized the ureters and pelvis.

In 1929, Hryntschak utilized iodine and bromine compounds in conjunction with caffeine, pituitrin, and other drugs to promote their excretion. Some results were obtained in a few cases, but according to his statement, the results did not satisfy the conditions required by him.

In 1929 and 1930, at the Munsch Urolog. Cong., Ziegler and Koehler reported on the oral administration of 10 gm. of sodium iodine and 10 gm. of urea, utilizing compression over the sacro-iliac regions.

In 1928, the first practical results were achieved by Roseno by means of the intravenous administration of a compound containing sodium iodide bound to urea, called pyelognost. Furthermore, Roseno was the first to stress the functional aspects of the problem. According to reports, reactions were encountered.

Finally, Swick of New York, continuing in the footsteps of his predecessors, was the first to successfully attain intravenous urography. He began his work at Lichwitz's Clinic in Altona (Hamburg) where a compound called Selectan-Neutral was utilized. This compound was synthesized by Binz and Raeth, and employed against streptococcus infections at the suggestion of Binz. From a study of its iodine content and its excretion through the urinary tract, Swick was led to the thought of applying it roentgenologically. Some results were obtained, but not sufficient for practical purposes; furthermore, there were toxic manifestations. In order to achieve greater tolerance, higher iodine content, and increased excretion, a conference was called, where Swick suggested that the methyl radical

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*Read before the Providence Medical Association, October 6, 1930.

[1]From the Department of Radiology, Mt. Sinai Hospital, New York City, Dr. L. Jaches, Director, and the Urological Service of Dr. Edwin Beer.

of Selectan-Neutral was the cause of the toxicity. This suggestion was based on the suspicion, at least empirically, that the methyl group had caused the diplopia noted clinically in several cases. Binz accordingly offered several substances of the Selectan group, synthesized by him and Raeth at an earlier date and now prepared in larger quantities for Swick's purposes. Several of these were found unsuitable owing to poor solubility.

Swick then transferred his activities to Von Lichtenberg's clinic in Berlin, where, finally, a substance having the methyl radical substituted by a sodium-acetate group was supplied by Binz, and successful results were obtained.

This substance, called Uroselectan, is chemically, and iodo-pyridon-sodium acetate compound, containing 42% of organically bound iodine. It is non-toxic, soluble in water, and neutral in solution. It is excreted as such, unchanged, in the urine from which it can be quantitatively recovered to the extent of 95% or more within 8 hours in normal cases. The importance of the latter lies in the fact that the quantitative estimation of excreted uroselectan, and the chronological sequence of its appearance, taken in conjunction with the density of the urographic shadows obtained, together constitute a valuable functional test. Studies indicate that during the first two hours the bulk of the uroselectan, namely 45 to 65%, appears in the urine in normal cases, the so-called "thrust excretion." In the next two hours about 20 to 30% is excreted, and the remainder during the subsequent hours. In illustration, it is observed that, in late visualization, renal function is held to be impaired even though a relatively dense pyelogram is eventually obtained. The "thrust excretion" is, therefore, an important functional indicator.

Intravenous urography is a safe, simple, and accurate method of obtaining a simultaneous bilateral, pyelo-ureterogram and cystogram. Furthermore, there is usually some intensification of the renal outlines. In my opinion it represents the greatest single contribution in recent years to urologic diagnosis. I wish to state here explicitly that, while intravenous urography is, in itself, an invaluable procedure, it nevertheless does not, and will not, do away with cystoscopy and rectograde or instrumental pyelography. In addition to an anatomical delineation of the entire urinary tract on both sides the method also supplies at the same time a functional differential estimate of the kidneys, together as well as separately.

Intravenous urography is indicated whenever functional and anatomical data are desired regarding the status of the urinary tract. It is specially indicated wherever cystoscopy, ureteral catherterization, and instrumental or retrograde pyelography is impossible for mechanical reasons, undesirable to the patient, or in the presence of renal tuberculosis or other severe urinary infections. One of its greatest fields of usefulness lies in the investigation of apparently healthy individuals. To quote Dr. Beer: "It must be evident that with uroselectan, in the future, the general practitioner will, with the aid of the radiologist, be able to make periodic health controls of his patients, which will be accurate without relying on time-honored and unsatisfactory urine analysis and palpation. In this way, lesions of a surgical character will be spotted at a much earlier period that at present, when many patients and physicians still dread cystoscopic pyelography."

Intravenous urography is further indicated where there is urinary bleeding, in implanted ureters, in infants and children, and whenever instrumentation is taxing and harmful, as in the aged, and in individuals with chronic cardiac or pulmonary disease, etc. No deleterious effects have been observed in patients with pulmonary tuberculosis. To date, experience is lacking in cases of hyperthyroidism.

It is contraindicated in uremia, or impending uremia as determined by preliminary studies of the blood chemistry, P.S.P. excretion, etc. Furthermore, it is of little value where renal function is poor, because no anatomical outline is obtained, and the functional data can be ascertained by other means.

The following were the reactions encountered at the Mount Sinai Hospital:

1. Transient thirst and sense of warmth, particularly about the forehead and region of the urinary bladder.

2. Slight nausea and vomiting occurred twice.

3. Para-venous infiltration with uroselectan caused pain but no necrosis or thrombosis.

4. There were no instances of iodism, and no evidence of renal damage following intravenous urography has been observed.

THE RHODE ISLAND MEDICAL JOURNAL

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The R. I. Medico-Legal Society—Last Thursday—January, April, June and October. Henry M. Boss, Jr., President; Dr. Jacob S. Kelley, Secretary-Treasurer.

EDITORIALS

SHALL WOMEN SMOKE?

For many years the question of the right of women to smoke was almost a moral question. This was brought about because of the habits of some women who were especially interested in the gratification of the desires of themselves and their companions. At the present time, however, when women have the liberties granted by the suffrage and when women in business are invading fields that were formerly only open to men, the moral aspect of smoking is not important.

The physical side of smoking is of extreme importance. There is no question that nicotine is a poison that in certain strengths will have an effect on the human organism. Also it is generally conceded that excessive smoking will lead to definite irritation of the mucous membrane of the upper respiratory tract. On the other hand, it is equally conceded that thousands and thousands of individuals have received satisfaction from smoking that far outweighs the possible physical handicaps.

Many people believe that smoking among women has tended to break down some of the finer characteristics of the true women, but others contend that the smoking has increased the true companionship between the sexes. There are undoubtedly individuals who carry this fad to excess and who will eventually feel the physical affects. Most people believe that smoking by women has come to stay and that, while there will always be some who will carry it to excess, just as there are among the so-called stronger sex, the habit will continue and that the rational members of the sex will use smoking for the companionship that it brings in their association with their own friends of both sexes.

HEALTH COUNCIL FOR PROVIDENCE

The first general recommendation made by Dr. James A. Wallace of the American Public Health Association in the Providence Health Survey made in 1929 was the formation of a Health Council for the City of Providence. For several years the Council on Social Agencies has filled a very useful purpose along this line. Its authority has been limited, and what has been accomplished has been done quietly, and the recommendations carried out by personal persuasion and the good will of all the welfare societies which were members of the Council.

It is evident to those who are somewhat familiar with conditions in other cities that co-operation of welfare societies and hospitals and other institutions has been greater here than in most cities. Care has been exercised to avoid duplication of health work and prevent competition between health agencies. Yet a careful reading of the Providence Survey Report makes it evident that still greater co-operation is needed to the end that even better health work could be accomplished without a very great increase in expenditure.

It is not desirable that a Health Council should be established and clothed with dictatorial powers. If properly constituted, it could, however, be of great service in advisory capacity. It should be a tribunal to which various health agencies and institutions could go for endorsement and support of present activities and the institution of any new enterprises. By its prestige it would be in a position to co-ordinate all phases of health activity. This would lead to greater efficiency, keep down the cost and prevent abuses.

Obviously the selection of this Health Council should be representative of both business and professional life. The character of its personnel would determine its usefulness. It should not be too large so that it would be unwieldy, nor too small to smack of being a cat's paw.

Since most of the health work has its foundation in the work of private practitioners of medicine in course of their own practices or the free service which they gladly give to hospitals and other health agencies, the medical profession should be represented. The Providence Medical Society should see to it such a representative is included and sponsor the appointment of a physician who will properly represent the interests of the physicians but at the same time who is sympathetic with all sound measures which will improve personal and public health.

MEDICAL INFORMATION CONCERNING PROMINENT PATIENTS

Besides the strictly medical problems in the care of a prominent patient, laid low by a dangerous disease, is the added difficulty of how much or how little information should be given out to newspapers or others who have an interested right to know something of what is going on, and who, if not given some sort of official information, will "make a story" often detrimental from all angles.

One must, of course, first of all be fair to the patient and his or her family. Second, the practitioner must be fair to himself and to his colleagues, especially those immediately connected with the case as consultants. And third, and of equal importance, one must be fair to an eager and sympathetic public, who, because of the local or national prominence of the patient, are much concerned for his welfare,—to say nothing of the business "interests" that may be involved.

And yet there is another angle. A strictly correct diagnosis in its usual terminology often unintentionally misleads the public as to the seriousness of the condition, not only to the patient himself, but may produce anxiety as to the supposed epidemic character of the disease.

An old and revered teacher of the writer used to say that it was a legal crime to steal a pocketbook,

but an unpardonable sin to steal the "Peace of Mind" of an individual or a community.

So the physician must guard against information emanating from the sick room which might rob the public of its peace of mind. This calls for diplomacy, tact, common sense and often real courage. Fortunately most physicians are largely endowed with these attributes.

A recent example of this situation resulting in a strictly correct but very inocuous newspaper diagnosis calculated to ease public nervousness was an admirable case of "Generalship" on the part of the attending physician. Any medically trained mind could "read between the lines" and see excellent judgment combined with professional skill.

Another instance, indeed, that the present generation of doctors are endowed with wisdom equal if not exceeding that of their forbears.

A CASE OF AGRANULOCYTOSIS

THEODORE C. MERRILL

PARIS

The subjoined case report is presented in the absence of certain details. The history is thus unavoidably incomplete. However, the case is not without interest, in view of the limited number of the cases thus far reported. The patient was an American woman, aged 40 to 50, and first seen on April 19, 1930.

History. The menopause had been terminated uneventfully several years before. Weight had been progressively lost during several months prior to the present illness. Elevated temperature had continued for some three weeks or more preceding the first visit. Vague pains, more especially localized in the region of the right hip, had suggested the presence of arthritis and had led to the prescription of salt baths.

Status. The patient was fairly well-nourished. Temperature, 100° to 101° F. Pulse, 72. Pain was present about the right hip, in the lower dorsal region and along the rami of the lower jaw. A sensitive, enlarged gland, about the size of a pea, was palpable below the angle of the left maxillary ramus. One or two palpable inguinal glands were found, not larger than peas. The splenic and hepatic areas were normal, the patellar and pupillary reflexes were normal and prostration was only moderate. The prostration increased rapidly.

April 21. Mild soreness appeared about the teeth and gums, in the upper and lower jaw.

April 22. Temperature, 101.6°. The palate and pharynx were congested and seeming infection of ulcerative type was developing about the gums. A dentist began treatment of supposed fuso- spirillar infection, the principal topical agents being neosalvarsan and methylene blue. No apparent local effect was produced.

April 23 and 24. Temperature, 102° to 103°. Oral signs and prostration increasing.

April 25. Local and general signs as before. Blood examination showed: red cells, 4,588,000. Hemoglobin, 51 per cent. White cells, 3,500. Differential count: neutrophilic polynuclears, 0; small lymphocytes, 86 per cent; large mononuclears, 12 per cent; eosinophils, 0; basophilic polynuclears, 1 per cent; Türck cells, 1 per cent. Very slight anisocytosis and poikilocytosis.

The blood examination sufficed to establish diagnosis of agranulocytosis, first described by Schultz, in 1922. In view of the fact that many of the cases thus far reported present a history of intravenous injections of arsenicals, the local arsenical applications and an arsenical tonic which had been begun were discontinued.

April 27. Blood examination showed 3,000,000 red cells and 1,300 leucocytes, consisting practically of small lymphocytes, as before, with normal bleeding and coagulation times.

Therapeutic measures were merely symptomatic. For relieving oral distress, topical applications of 1 per cent cocain were resorted to. A hepatic extract was given on general principles and blood transfusion was tried, 100 c. c. being transfused from a normal universal donor. The only result consisted of brief marked chill and rise of temperature. The gland at the angle of the left maxillary ramus was now as large as an almond. Other glands had not increased in size. Prostration and the oral lesions were much aggravated.

April 29. Blood examinations showed 2,500,000 red cells and but 700 leucocytes, all being small lymphocytes. Air hunger was marked, perspiration was considerable, much flatus was passed and agitation and delirium intermitted, subsiding

rapidly and again recurring. The patient refused all further special treatment and examination. Death occurred on May 3.

The duration of the case is estimated at about six weeks. Prodromes may have existed, but information on this point is largely lacking. Hemorrhageis signs did not appear. The clinical triad described by Schultz, namely, ulcero-necrotic lesions of the mouth and pharynx, evidences of grave infection and the special blood picture, were present.

In American textbooks, the affection in point is commonly called agranulocytic angina. A general review of the subject appears in the *Gazette des Hôpitaux*, January 2, 1929, by P. Baize and V. Boquien. An excellent summary is also presented in *Le Monde Médical*, No. 767, p. 418, March 1-15, 1930.

FAVUS

REPORT OF FIVE CASES

By WILLIAM B. COHEN, M.D.
105 WATERMAN STREET
and
DR. EDWARD J. WEST
PROVIDENCE CITY HOSPITAL

Favus is not indigenous in this country, but is to be found frequently among the Russian, Polish, or Italian immigrants at any age. It is caused by the Achorion schoenleinii (Vegetable fungus). The disease appears chiefly upon the scalp but may affect the glabrous (non-hairy) skin and the nails. The characteristic lesions are sulphur yellow or saffron, pin-head to pea-sized, cup-shaped crusts, called scutula, each of which is usually pierced by a hair. The scutula are often imperfectly formed, and appear as scattered grayish yellow specks or in thick yellow clusters, or through coalescence, as extensive thick, dirty yellow, adherent crusts. They have a mousy odor which is fairly characteristic. On the glabrous or non-hairy skin, the patches form thickly crusted yellowish discs which through their fusion and peripheral extensions may cover large areas. The lesions are frequently multiple and even numerous, and they have a tendency to simulate ringworm, forming rings which, however, may be surrounded by an inflammatory halo. When the nails are affected, they become brittle, discolored, irregularly thickened, and under the free margin there are collections of crusts. Clinically, the appearance is not distinguishable from the other forms of onychomycosis. When the scalp is involved, the hairs in the patches become dry, lusterless, wiry and loose, and about their base are convex sulphur yellow crusts.

As the disease progresses, alopecia and scarring intervene, often associated with suppuration. The scars are as a rule white and depressed. The atrophy causes a smooth, glossy, thick, paper-white hairless patch, even the follicular orifices being absent. These patches are generally irregular in shape with a tendency to be more or less oval, and they may be small or large, and of any number.

The condition is said to be only moderately infectious, and as a rule spreads as a result of direct contact.

The disease yields rather favorably to treatment on the glabrous surfaces, but when it involves the scalp, more radical and intensive treatment should be instituted as follows:

(1) Complete removal of hair. Extensive care must be taken to burn the hair, and the clippers should be thoroughly sterilized.

(2) Complete epilation of the scalp by the Roentgen Ray.

(3) Daily shampooing of the scalp and application of a 20 per cent sulphur preparation.

At the end of three months following epilation, the disease should be cured and the hair restored. Alopecia due to the disease is permanent.

The following cases have been seen in Providence recently.

Case No. 17906-B. A well developed and nourished girl, sixteen years old, born in Italy and residing here for the past two and one-half years, was seen at the Rhode Island Hospital Skin Clinic in January, 1929. She presented an eruption on the scalp consisting of yellowish crusts on a saucer-like base adherent with desquamation over the entire scalp, and one large patch of alopecia with atrophic skin, completely denuded of hair. The hair on the rest of the scalp was dry, brittle, and easily removed.

Laboratory examination was positive for the Achorion schoenleinii. The case was presented before the New England Dermatological Conference in Boston in January, 1929. The case was treated as outlined above, and completely cured.

Case No. 723-B. A fairly well developed and nourished girl of twelve years, born in Providence, was seen at the Providence City Hospital in December, 1930. For the past three or four years she has had a scaly eruption of the scalp treated without effect. She presented a large oval patch of alopecia about two inches in diameter on the posterior aspect of the scalp presenting a smooth, glossy patch. There were some small yellow colored crusts surrounding this area. The hair was dry, lusterless, and easily removed. Laboratory examination was positive for the organism.

The case was presented before the New England Dermatological Society in Boston in December, 1930.

A close inquiry into the case revealed the fact that three other children in the family had a condition which might be closely related. They were seen at the Providence City Hospital Skin Clinic and found to be positive cases of favus.

Conclusion

The facts herein presented serve to emphasize the following points.

(1) The disease is not infrequently seen in this section of the country.

(2) The disease does rarely occur in the native-born.

(3) One of these cases has gone unrecognized for four years.

(4) The infectiousness of the condition warrants consideration from a hygienic standpoint.

STAMMERING: A PSYCHO-NEUROSIS

By Samuel Starr, M.D.

206 Waterman Street, Providence, R. I.

Various theories have been presented in the past to explain the phenomena of stammering, but no definite progress has been made in solving the problem adequately. Recently, however, with the aid of psychoanalysis a new theory has been evolved which shows rather convincingly that stammering is a form of oral neurosis and not merely a difficulty of speech.

Before discussing the evidence in favor of this newer theory, it would be well to review briefly some of the principal older theories. Many of these are quite fragmentary and unscientific, just as were the theories of infectious diseases prior to the discoveries of modern bacteriology and microscopy. A characteristic of these theories is that the physical and physiological aspects of stammering are emphasized rather than the psychological. Hence, there developed such theories as stammering due to nervousness (as from fear or anxiety), stammering due to cerebral congestion, incorrect respiration, defective auditory or visual memory, anatomical malformation of the speech organs, and such other theories as stammering being due to forcing an individual to use his right hand although he was born left handed.

This multiplicity of theories indicates the difficulty of solving the riddle of stammering. Any treatment, therefore, based on such theories would be of necessity incorrect. The stammerer is always ignorant of the motivating mechanisms which cause his difficulties. He is only aware of his anxiety and fear, which are usually symptomatic reactions and not causes of the disability.

A number of paradoxical features peculiar to stammering contradict various elements of the above mentioned anatomical or physiological theories. Thus, it is well known that stammerers are able to sing without difficulty; that stammerers are able to read aloud when alone without trouble; and that stammerers are able to talk aloud to themselves without stammering. Furthermore, stammerers can recall the sound images of vowels and consonants with which they have difficulty. These various inconstancies and paradoxes tend to indicate a non-organic condition of the speech apparatus.

In the past few years, a fairly considerable literature has accumulated developing the present day analytic conception of stammering as a psychoneurosis. The earlier work in this field was done by Appelt, Stekel, Dattner, Eder and Coriat. In 1925, Dr. Coriat of Boston read a paper before the Ninth International Psychoanalytical Congress presenting further facts supporting the analytical theory of stammering. In 1927, he published a monograph amplifying and co-ordinating

the various contributions on the subject. This monograph may be consulted for a more complete and detailed presentation.

From the psychoanalytical viewpoint, stammering is undoubtedly an oral neurosis or a "mouth pleasure fixation." It is a difficulty in peripheral enunciation of psychic and not physical origin. Fear and anxiety are secondary emotional effects and not causes of stammering. The true mechanistic cause of stammering is unknown to the sufferer, that is, it is unconscious.

An objective analysis of the individual stammerer shows, coincident with the speech difficulty, movements of the mouth and lips and excessive salivation analagous to the objective manifestations of the infant nursing at the mother's breast. That is, the gratification or the "mouth pleasure" of the nursing infant persists in the adult stammerer. Another significant feature is that the labial consonants p, b and m, which cause difficulties for the stammerer, are among the earliest sounds made by children, and the muscles which produce these sounds are the same muscles used in nursing. Furthermore, the sucking and biting of syllables and the chewing of words by stammerers are analagous to similar actions of the infant at the breast. In this same category may be placed the stammerer's grinding of his teeth, the spasm of the jaw muscles and the appearance of satisfaction when finally able to enunciate a word.

On the basis of the above analytical interpretation, the older methods of treatment of stammering must be revised. It is necessary to overcome the "mouth pleasure fixation." If this is done, the neurotic anxiety and fear will take care of themselves. Speech training is unnecessary, because it is temporary and treats only the symptom and not the underlying cause of the oral neurosis. The oral neurosis must be overcome by psychoanalysis which brings to the surface the repressed or unconscious material of early childhood and makes it conscious. The patient's dreams will very often give the clues to the particular repressed emotions. The speech difficulties may become temporarily worse under analytical treatment due to an unconscious resistance to the analysis. This is not a hindrance to a good therapeutic result, which will usually require months of active treatment.

There are a number of prophylactic measures which may be followed during the development of the child in an effort to prevent the persistence of the oral fixation. Avoid too long nursing. Prevent thumb sucking and sucking on rubber nipples. Avoid "all day sucker" candy and chewing gum. Do not attempt to scold or correct a stammering child, but direct his energies to playing and ignore the stammering. When the stammering has developed, let it be treated by a physician trained in psychoanalysis and not by a layman with phonetic exercises.

In summary, it may be stated rather definitely that the disturbing mechanism in stammering is psychic and not physical. Stammering represents a regression to the infantile stage of oral gratification as manifested by the pleasure of nursing. The stammerer re-experiences a former pleasurable state which he never entirely relinquished. Methods of treatment based on the older theories of the causation of stammering should now be considered antiquated and incomplete, particularly in the light of the far more successful and satisfactory results obtained by the newer psychoanalytical methods.

SOCIETIES

Providence Medical Association

The annual meeting of the Providence Medical Association was called to order by the President, Dr. Clinton S. Westcott, January 5, 1931, at 8:45 P. M. The records of the last meeting were read and approved. The annual reports of the Secretary, Treasurer, Standing Committee and Reading Room Committee were read and accepted. A letter from Dr. Ellen A. Stone, thanking the Association for its greeting, was read. The report of the Milk Commission by Dr. Reuben Bates was read and accepted. The President announced the appointment of Craig S. Houston as chairman of the Obituary Committee on William T. Knoop.

The first paper of the evening was read by Dr. G. W. Dorrance of Philadelphia on the "Treatment of Cleft Palate." This is found in many of the lower animals. It is a congenital deformity and often associated with other anomalies. He has found this condition running back six gen-

erations. The mortality among these cases is large. The mortality in operations for hare lip is seven per cent, so always wait till they are in good condition. Cleft palates are preferably operated from three years on, and never until they are in good condition. Proper operation and follow up care will give normal speech in six to twelve per cent. Small clefts in the back give the worst speech. A large number of lantern slides were shown illustrating the anatomy and details of operations.

The chief point of his work is that superior constrictor is a true sphincter, cleft palates are shortened posteriorly and at operation are thoroughly freed, pushed back and thus the sphincter is allowed to close, thus shutting off the nasopharynx. The paper was discussed by Drs. Barrows, Stilson, Hawkins, Westcott, Dorrance and Charles Smith.

The Secretary read an obituary on Dr. Walter O'Keefe presented by Drs. Fulton and N. Darrell Harvey.

The annual address of the President was read by Dr. Westcott. This was of an optimistic tenor, the reader not fearing the prophecies of socialistic or state medicine. He felt that the family practitioner still existed not as one who knew all medicine but knew his patients and when they needed the help of specialists.

The Secretary was instructed to cast one ballot for Dr. John E. Donley as President. Dr. Joseph Hawkins was instructed to escort him to the chair. The newly elected President made a few remarks.

In accordance with Article 1, Section 6, of the By-Laws, the officers and committees were elected as follows:

For President—John E. Donley, M.D.

For Vice-President—Lucius C. Kingman, M.D.

For Secretary—Peter Pineo Chase, M.D.

For Treasurer—Charles F. Deacon, M.D.

For member of the Standing Committee for five years—Clinton S. Westcott, M.D.

For Trustee of the Medical Library for one year—Albert H. Miller, M.D.

For Reading Room Committee — George S. Mathews, M.D.; Elihu Wing, M.D.; Guy W. Wells, M.D.

For Delegates to the House of Delegates of the Rhode Island Medical Society—W. Pickles, M.D.; A. A. Barrows, M.D.; G. H. Crooker, M.D.; W. S. Streker, M.D.; E. M. Porter, M.D.; C. F. Gormly, M.D.; H. McCusker, M.D.; P. P. Chase, M.D.; J. T. Monahan, M.D.; H. Libby, M.D.; A. W. Mahoney, M.D.; J. A. Gilbert, M.D.; F. W. Dimmitt, M.D.; C. W. Skelton, M.D.; T. W. Grzebien, M.D.; R. DiLeone, M.D.; L. I. Kramer, M.D.; W. A. Horan, M.D.; P. C. Cook, M.D.; J. J. Hoey, M.D.

For Councillor for two years—Edward S. Brackett, M.D.

The President appointed as Collation Committee, Frank B. Littlefield and Raymond F. Hacking; Publicity Committee, Creighton W. Skelton, Isaac Gerber and Charles F. Gormly.

It was voted to appropriate $250.00 for the purchase of journals, $200.00 for binding journals, and $450.00 were donated to the R. I. Medical Society. The annual dues for the ensuing year were fixed at five dollars.

The meeting adjourned at 10:30 P. M. Attendance, 85. Collation was served.

Respectfully submitted,

PETER PINEO CHASE
Secretary

RHODE ISLAND STATE DENTAL SOCIETY

President, Dr. Philip A. Duffy, East Greenwich, Rhode Island.

Vice President, Dr. Edward F. Gill, Providence, Rhode Island.

Secretary, Dr. Charles J. Smith, Providence, Rhode Island.

Treasurer, Dr. William J. McGovern, Cranston, Rhode Island.

Editor, Dr. Ambrose H. Lynch, Providence, Rhode Island.

A meeting of the Dental Society was held at the Biltmore Hotel, January 27th and 28th. Members of the R. I. Medical Society were invited.

HOSPITALS

MEMORIAL HOSPITAL

Meeting held December 11, 1930, was called to order at 9:15 P. M. Minutes of last meeting were read and approved.

Motion made by Dr. James L. Wheaton which was seconded to send greetings of the Staff to Dr. F. V. Hussey in Switzerland. Motion was carried, suitable card and message was presented and ordered sent.

Dr. James L. Wheaton read a very interesting paper on intracranial hemorrhage and presented one case.

Dr. Jacob Greenstein presented a case with difficulty in diagnosis. The autopsy findings were described by Dr. J. F. Kenney, the conclusions being that the death was due to persistent thymus gland and tuberculous mesentery gland.

Dr. Kathleen M. Barr presented two cases of focal infection, (1) polyarticular arthritis showing relief 48 hours after tonsillectomy and (2) acute arthritis also relieved by tonsillectomy.

Dr. Albert Vandale presented a case of persistent headache. This was found on autopsy to be due to a large cerebellar abscess secondary to ear infection. The laboratory findings showed a mixed infection of B. Coli and streptococcus.

The papers were discussed by Drs. J. F. Kenney, P. Batchelder, J. L. Wheaton, J. L. Turner, Wm. P. Davis, and A. T. Jones.

Meeting adjourned at 10:28 P. M.

STANLEY SPRAGUE, M.D.,
Secretary.

MISCELLANEOUS

DIAGNOSTIC VALUE OF COMPLEMENT FIXATION TEST IN AMEBIC INFECTIONS

Charles F. Craig, Washington, D. C. (*Journal A. M. A.*, July 5, 1930), gives the results obtained with his complement fixation test to March 30, 1930, together with a discussion of its value in the diagnosis of infections with *Endameba histolytica,* based on his experience with it over a period of nearly three years. The exact technic of the test has been described but it may be stated that the general technic is the same as that employed in the standard method for performing the complement fixation test for syphilis. The human hemolytic system is used. The blood serums to be tested are inactivated by being heated in a water bath at 56 C. for one-half hour, and the antigenic extract is used without dilution because of its weakness in antigenic property. The individuals tested have been mostly patients in the Walter Reed U. S. Army General Hospital, where the test is being used as a semiroutine test in suspicious cases. More than a thousand serums from as many individuals have been tested, but this report concerns only those tests in which the feces have been checked for the parasite, numbering 689, of which 84, or approximately 12 per cent, gave a positive reaction, and 605, or 88 per cent, gave a negative reaction. The character of the reaction with this test is usually very clear cut, being either 3 plus or 4 plus when read on a 4 plus scale. Thus, of the 84 positive cases, no less than 71 gave a 4 plus reaction and the remainder a 3 plus reaction. In the 84 positive cases, a check of the feces for *Endameba histolytica* resulted in the demonstration of this parasite in 77 cases, or almost 92 per cent. In 13, or about 8 per cent, he was unable to find the parasite, but this negative finding cannot be considered absolutely conclusive because of the fact that in most of these cases it was not possible to make more than one or two examinations of the feces. Of the 84 positive cases, 57 showed infection with *Endameba histolytica* alone; 10 were mixed infections with *Endameba histolytica* and *Endameba coli*; 5 with *Endameba histolytica* and *Endameba (Endolimax) nana;* 2 with *Endameba histolytica Endameba nana* and *Endameba coli;* 2 with *Endameba histolytica* and *Chilomastix mesnili;* 2 with *Endameba histolytica* and *Giardia intestinalis,* and 2 with *Endameba histolytica* and *Trichomonas hominis.* There were 605 cases in which the feces were checked that gave a negative result. In these, *Endameba histolytica* was found in five cases, or 0.8 per cent. One of these cases was a severe acute case of amebic dysentery; one was an abscess of the liver; one was symptomless, while the other two showed gastro-intestinal symptoms that were suspicious. Therefore, it is evident that persons infected with this parasite do not all give a positive reaction, but the percentage is apparently very small. Of the 605 patients giving a negative reaction, there were no less than 211, or 34.8 per cent, infected with other species of protozoa. Thus, there were 96, or 18.8 per cent, infested with *Endameba coli;* 60, or 9.9 per cent, infested with *Endameba nana;* 3, or 0.4 per cent, infested with *Iodameba williamsi;* 25, or 4.1 per cent, with *Chilo-*

mastix mesnili; 16, or 26 per cent, with *Trichomonas hominis,* and 11, or 1.8 per cent, with *Giardia intestinalis.* There were 11 mixed infestations with *Endameba coli* and *Endameba nana;* 6 with *Endameba coli* and *Chilomastix mesnili;* 4 with *Endameba coli* and *Giardia intestinalis,* and 3 with *Endameba coli* and *Trichomonas hominis.* That infestation with other species of amebas found in the intestinal tract of man does not lead to a positive complement fixation reaction with this test is evidenced by the fact that 159 of the patients giving a negative reaction, or 26.2 per cent, were infested with some species of ameba other than *Endameba histolytica.* Practically all of the 605 individuals giving a negative reaction were patients in a general hospital suffering from a wide range of acute and chronic disease conditions, so that it appears justifiable to conclude that the test is not positive in other diseases, with the exception of certain rare cases of syphilitic infection. As the antigen used in this test is an alcoholic extract not only of *Endameba histolytica* but of the bacteria that may be growing with it in the cultures, and of material from the culture medium, it was believed possible that the results obtained with the test might be due to the nonspecific substances in the extracts and similar to the results obtained in the Wassermann test with alcoholic extracts of normal tissues. For this reason, and in order to obviate such a source of error and ascertain whether the positive results were due to syphilis, a check of the serums tested has been made by subjecting them to a Wassermann and Kahn test in addition to the complement fixation test for *Endameba histolytica.* The results of this check have shown that 13, or 15.5 per cent, of the 84 patients giving a positive reaction also gave a positive Wassermann and Kahn reaction, while 71, or 84.5 per cent, gave a negative Wassermann and Kahn reaction. Of the 605 individuals giving a negative reaction with the complement fixation test for *Endameba histolytica,* 54, or approximately 9 per cent, gave a positive Wassermann and Kahn reaction, 551, or 91 per cent, gave a negative Wassermann reaction, and 549, or 90.9 per cent, gave a negative Kahn reaction. It will thus be seen that there were slightly more than 6 per cent positive Wassermann and Kahn reactions in those giving a positive result with the complement fixation test for *Endameba histolytica* than in those giving a negative result. It is also significant that, of the 13 individuals giving a positive reaction to all three tests, no less than 8 failed to show *Endameba histolytica* in the feces, although it may be stated that in these cases not more than two examinations were made of the feces. When the services of a competent protozoologist or of one trained in the differentiation of the parasitic amebas of man are available, the complement fixation test would be of comparatively little practical value; but when such services are not available, it is believed that this test may be a most valuable adjunct to diagnosis. It is unnecessary to stress here the difficulty of differentiating the various amebas of the human intestine, and it is most unfortunate that such differentiation is being attempted at this time by many technicians who are entirely untrained in protozoology. The use of the complement fixation test, under such conditions, would be of service in checking the diagnosis made by untrained or improperly trained laboratory workers. In view of the elaboration of new and very efficient methods of treatment of amebic infection, the recognition of latent infections and infections showing atypical symptoms is of the greatest importance, as proper treatment usually results in the permanent disappearance of the parasite. It is in this class of cases that the complement fixation test should prove of great value when expert microscopic diagnosis cannot be obtained. At the present time the practical value of the test is limited by the difficulty of preparing the antigenic extract. For this purpose it is necessary to extract a large number of cultures of *Endameba histolytica,* and the cultivation of this organism is difficult even in experienced hands, especially when the cultures have to be maintained for weeks and months in order to make it possible to keep such antigenic extracts on hand. It is also true that not all extracts possess enough antigenic properties to be of practical use, even though the same strain of the organism is used and the method of extraction is standardized. Until it is possible to cultivate *Endameba histolytica* in pure culture, one must expect to obtain anomalous results at times, owing to the fact that the extracts are made from mixed cultures of the ameba and bacteria. The technic of this complement fixation test, while similar to that of other complement fixation tests, is rendered

more difficult by reason of the fact that the antigenic extract is so weak in antigenic properties that it has to be used without dilution. For this reason every step of the technic must be thoroughly controlled and the test should be performed only by a qualined serologist and the results checked, whenever possible, by an examination of the feces by one skilled in the differentiation of the various species of amebas occurring in the intestine of man. At the present time Craig does not feel that this test is on the practical basis that a complement fixation test should be before it is relied on alone in the diagnosis of a specific infection. The difficulties inherent in the preparation of the antigen and in the technic are such that in its present stage of development it could be performed only in laboratories where the services of a serologist and protozoologist are available. However, it is felt that further research will simplify the technic of preparing the antigenic extract and that eventually the test will be comparable to the complement fixation test for sylphilis as regards practical utility.

FETAL CEPHALOMETRY IN UTERO

The average figures of the usual cephalic measurements of unmolded new-born infant heads show a departure from the measurements of molded heads. A comparison of the average figures for the various head diameters and circumferences shows a distinct ratio between the occipito-frontal diameter and the other diameters and circumferences. A knowledge of the occipito-frontal diameter in utero enables one to compute the biparietal diameter and the occipito-frontal circumference with sufficient accuracy for obstetric purposes. A knowledge of the occipito-frontal diameter in utero is of value in establishing the age of the fetus in utero. Herbert Thoms, New Haven, Conn. (*Journal A. M. A.*, July 5, 1930), presents his procedure for estimating the occipito-frontal diameter in utero. The plane to be measured must be identified and the distance above the sensitive plate measured. This is performed by means of abdominal palpation and a pair of dividers. After the plane through which the occipito-frontal diameter passes has been established and the number of centimeters above the sensitive plate measured with the patient in the horizontal position, the exposure is made with the tube at a distance of 36 inches, centering directly over the midpoint of the diameter. With the tube and exposed plate still in position, the patient is removed from the table and the perforated lead plate is introduced in the same plane as that occupied by the occipito-frontal diameter. This plate is a 17 by 20 inch sheet of lead, 1 mm. in thickness, mounted on a board and perforated with tiny holes just 1 cm. apart. A flash exposure is made on the previously exposed plate, and on development will be seen the image of the fetal head shadow and a series of black dots, farther apart than 1 cm., but representing the centimeter scale in the plane of the occipito-frontal diameter. This corrects for at least a working basis the divergence of the rays in their passage from the target to the plate. In viewing the developed plate, it is obvious that not only may the occipito-frontal diameter be readily measured but an outline of the cranium may be easily drawn to scale. This should be of importance in studying the effect of labor on the molding process of the infant head. Such studies are now being made in the author's clinic. Questions will naturally arise with regard to certain points in the procedure outlined. The first will concern the determination of the plane in which the occipito-frontal diameter lies. After a little acquaintance with the method, it will be found that a considerable latitude in certain points is allowable. For instance, the establishment of this plane within a range of from 1 to 3 cm. above the plate affects the end-result so slightly as to be negligible for working purposes. The question also arises as to the dipping of the vertex either anterior or posterior to the transverse diameter of the superior strait. This also affects the end-result, but minimally, provided the head is not firmly fixed low in the pelvis. In checking his results in infants measured in utero before, and extra utero immediately after cesarean section, Thoms has found that 2 mm. should be added to the intra-uterine measurements. This figure represents the thickness of the scalp over the frontal and occipital bones. The shadow of this integument is not seen, of course, in the roentgenogram.